UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF NEW HAMPSHIRE

OCADO INNOVATION LTD. and OCADO SOLUTIONS LTD., Plaintiffs, v. AUTOSTORE AS and AUTOSTORE SYSTEM INC., Defendants.	Case No. **JURY TRIAL DEMANDED**

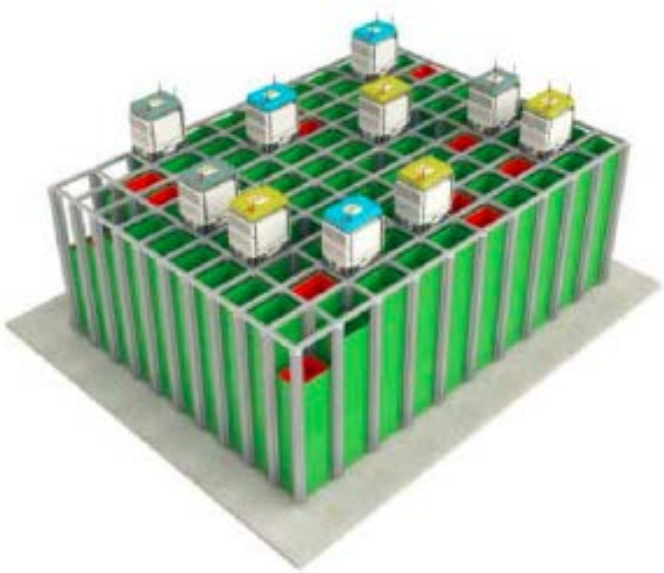
PATENT INFRINGEMENT COMPLAINT

Plaintiffs Ocado Innovation Ltd. ("Ocado Innovation") and Ocado Solutions Ltd. ("Ocado Solutions"; together, "Ocado" or "Plaintiffs") allege the following, on information and belief, in support of their Complaint against Defendants AutoStore AS and AutoStore System Inc. (together, "AutoStore" or "Defendants"):

INTRODUCTION

1. Defendants, and Defendants' business partners and customers, have infringed and continue to infringe one of Ocado's U.S. patents, which relates to inventions that Ocado developed in connection with its successful cubic automated storage and retrieval system ("Cubic AS/RS"). Ocado's innovative Cubic AS/RS is called the Hive, and it is part of the Ocado Smart Platform ("OSP")—an end-to-end solution for grocery order placement, fulfillment, and delivery. OSP includes (i) an Internet-based ordering system, (ii) Customer Fulfillment Centers ("CFCs," which include the Hive), and (iii) last-mile management for quick delivery of orders.

2. The Cubic AS/RS provides a high-density storage cube, with robots that move along the top of the cube, retrieve containers that store inventory items up vertically from a storage column, and deliver them to picking stations for assembly of customer orders. A Cubic AS/RS is depicted in the following graphic:



3. The Cubic AS/RS stands apart from other forms of automated order management—*e.g.*, conveyor belt systems and robotic cranes that select items from warehouse shelves—because, among other things, a Cubic AS/RS provides (i) high storage density (and attendant cost savings), and (ii) extremely quick, safe, and accurate order fulfillment. The robots moving on top of a storage cube act at the direction of "air traffic control" technology that optimizes their travel paths, which enables them to store and retrieve items rapidly. Merchants that experience high throughput—*e.g.*, online grocery merchants that need to handle thousands of orders in a matter of hours—are increasingly turning to Cubic AS/RS as a solution, especially as online shopping increases dramatically.

4. Ocado's innovative Cubic AS/RS—the Hive component of OSP—illustrates the maxim that necessity is the mother of invention. As one of the first dedicated online grocery

businesses, Ocado needed to find ways to solve unique problems encountered by an online grocery business. For example, an online grocery business must (i) manage extremely high customer order volume—in terms of both the number of orders and the size of any particular order—which sometimes requires fulfillment and shipment of thousands of orders in a matter of hours, and (ii) reliably store, handle, and deliver frozen, refrigerated, and other perishable items. When Ocado started its online grocery business in 2002, Ocado therefore sought to automate order processing as much as possible so its fulfillment of customer orders could be rapid and accurate.

5. With respect to grocery order fulfillment, Ocado evaluated, but ultimately rejected, "off the shelf" automated storage and retrieval systems, including Defendants' Red Line system, a Cubic AS/RS which has not materially improved since 2005. The Red Line system utilizes cantilever robots (depicted in the image below), which traverse the underlying grid using two perpendicular wheel assemblies—one in the X-direction and one perpendicular in the Y-direction. The Red Line robots have a main body that stores driving and lifting mechanisms and electronics, and a cantilevered "arm" to lift storage containers (sometimes called bins or totes) out of the storage cube. In other words, the Red Line robots occupy two grid spaces—one for the main body, and one for the cantilever "arm":

6. Ocado found the Red Line system unsuitable for a grocery business for numerous reasons, and the following are four examples. *First*, cantilever robots are limited in how they can move on the top of the storage cube because of their shape (the cantilever "arm" obstructs the passage of other robots on adjacent paths). *Second*, the Red Line system's robots run on tracks that further compromise mobility. In the image above, for example, the Red Line robot is depicted on "single-single" rails, which means the robots cannot pass immediately next to each other in any direction because their wheels would collide on the track. *Third*, Red Line robots are slow and energy inefficient because of the cantilever design. The wheels that lie between the main body and cantilever "arm" create a fulcrum around which the entire body of the robot may pivot (and fall over). Accordingly, the main body of the robot needs to counteract the tipping effect, and that negatively affects the speed and energy efficiency of the robot. *Fourth*, Red Line's robots often would stack storage containers such that a container stuck out of the top of the storage grid. That created an obstacle to robot travel, and reduced the available routes for robots to take (which, in turn, reduced system efficiency).

7. Disappointed with "off the shelf" options, Ocado proposed that AutoStore and Ocado work together to reimagine Cubic AS/RS and implement several of Ocado's ideas to improve the system. AutoStore initially engaged in discussions—meeting with Ocado representatives in Norway, travelling to one of Ocado's automated warehouses in the United Kingdom, and expressing interest in Ocado's innovative set-up—but then AutoStore abruptly cut off discussions with Ocado, claiming that the partnership would be inconsistent with AutoStore's business model. Ocado therefore decided to innovate on its own, working with external engineering firms to make Ocado's inventions a reality.

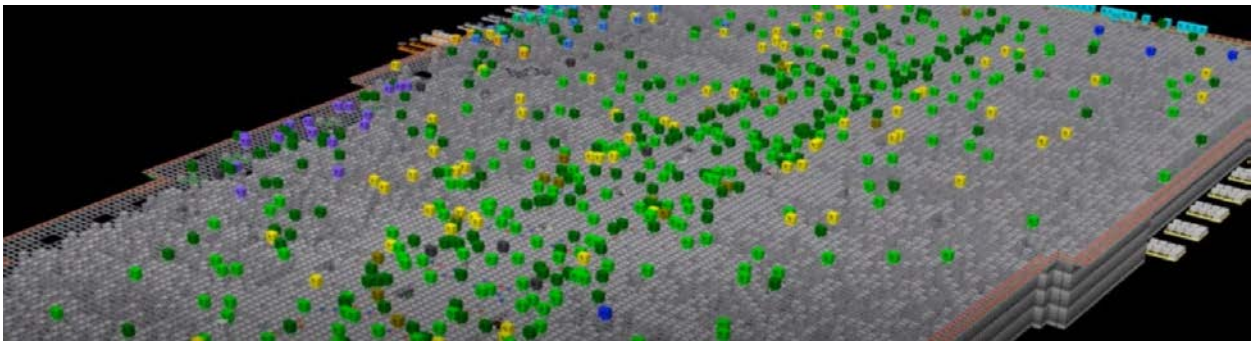
8. Ocado's invention was a complete reimagining of AutoStore's pre-existing Cubic AS/RS. Ocado's reimagining made Cubic AS/RS capable of use for management of grocery

orders in several respects, but one particularly important improvement was dispensing with cantilever robots. Ocado's robots occupy a single space on the storage grid and they lift a storage bin up inside a cavity in the robot's body. That technology increases efficiency because, among other reasons, robots are able to pass on adjacent grid squares in two directions. Additionally, the wheels of an OSP robot run on "double-double" rails, which give the robots the ability to pass immediately next to each other on the same rail in the X-direction and Y-direction. A video of OSP's robots in operation is available on YouTube,[1] and the following is a still image from that video:

9. Because Ocado's single-space robots have greater freedom to move on top of the grid, the robots can be managed by more complex "air traffic control" software, which has a much greater probability of identifying an available traffic route that will be most efficient for item storage and retrieval (*e.g.*, relative to the constrained movement of Defendants' cantilever robots).

[1] Tech Insider, *Inside a Warehouse Where Thousands of Robots Pack Groceries*, YouTube (May 9, 2018), https://www.youtube.com/watch?v=4DKrcpa8Z_E.

Ocado's robots can travel at a speed of up to four meters per second, while coordinating with a central controller that uses Ocado's route optimization technology, and the system can complete the pick of a 50-item grocery order in fewer than five minutes. Ocado's Hive is extremely complex, and it can span the area of several football fields, as shown in the following rendering of a real installation:



10. To date, Ocado has invested more than $1 billion to design and develop OSP, and Ocado continues to innovate, spending hundreds of millions of dollars each year on R&D for new technologies to be implemented with OSP—investing about $164 million in 2019 alone.[2] In part because of these innovations, Ocado's online grocery business has thrived.

11. Although Ocado originally developed the Hive to support its own online grocery business, the value of the Hive—and OSP as an overall end-to-end solution—has been recognized by others, and Ocado has launched an independently successful business selling OSP technologies to other merchants. In 2018, for example, Ocado entered into an exclusive grocery partnership with The Kroger Company ("Kroger")—the United States' largest grocery supermarket chain and second largest retailer (after Walmart)—to construct up to 21 CFCs across the United States. Those CFCs, which utilize Ocado's Cubic AS/RS innovations (including the patented inventions

[2] *See* Ocado Group plc 2019 Annual Report at 7 (May 13, 2020) (Ex. 1). This figure was reported in Ocado's annual report in GBP, and has been converted to USD using the Bank of England's reported daily spot rate for December 31, 2019 (£1 = $1.3210).

at issue in this Complaint), will allow Kroger to expand its geographic footprint, and the companies already have announced installations in (i) Ohio;[3] (ii) Central Florida and the Mid-Atlantic region;[4] (iii) Georgia;[5] (iv) Dallas, Texas;[6] (v) Wisconsin;[7] (vi) Maryland;[8] (vii) the Great Lakes,

[3] The Kroger Company, *Kroger and Ocado Identify Site of America's First High-Tech Customer Fulfillment Center* (Nov. 19, 2018), http://ir.kroger.com/CorporateProfile/press-releases/press-release/2018/Kroger-and-Ocado-Identify-Site-of-Americas-First-High-Tech-Customer-Fulfillment-Center/default.aspx (Ex. 2); *see also* The Kroger Company, *Kroger Delivery Introduces America's First Customer Fulfillment Center*, http://ir.kroger.com/CorporateProfile/press-releases/press-release/2021/Kroger-Delivery-Introduces-Americas-First-Customer-Fulfillment-Center/default.aspx (Apr. 14, 2021) (Ex. 3).

[4] The Kroger Company, *Kroger and Ocado Name Central Florida City Location of Second High-Tech Customer Fulfillment Center* (Mar. 19, 2019), http://ir.kroger.com/CorporateProfile/press-releases/press-release/2019/Kroger-and-Ocado-Name-Central-Florida-City-Location-of-Second-High-Tech-Customer-Fulfillment-Center/default.aspx (Ex. 4); The Kroger Company, *Kroger and Ocado Announce Two Additional Sites for High-Tech Customer Fulfillment Centers* (Feb. 19, 2019), http://ir.kroger.com/CorporateProfile/press-releases/press-release/2019/Kroger-and-Ocado-Announce-Two-Additional-Sites-for-High-Tech-Customer-Fulfillment-Centers/default.aspx (Ex. 5).

[5] The Kroger Company, *Kroger and Ocado Name Georgia Location of High-Tech Customer Fulfillment Center* (July 11, 2019), http://ir.kroger.com/CorporateProfile/press-releases/press-release/2019/Kroger-and-Ocado-Name-Georgia-Location-of-High-Tech-Customer-Fulfillment-Center/default.aspx (Ex. 6).

[6] The Kroger Company, *Kroger and Ocado Name Dallas Location of Fifth High-Tech Customer Fulfillment Center* (Sept. 12, 2019), http://ir.kroger.com/CorporateProfile/press-releases/press-release/2019/Kroger-and-Ocado-Name-Dallas-Location-of-Fifth-High-Tech-Customer-Fulfillment-Center/default.aspx (Ex. 7).

[7] The Kroger Company, *Kroger and Ocado Bringing 6th High-Tech Customer Fulfillment Center to Pleasant Prairie, Wisconsin* (Nov. 14, 2019), http://ir.kroger.com/CorporateProfile/press-releases/press-release/2019/Kroger-and-Ocado-Bringing-6th-High-Tech-Customer-Fulfillment-Center-to-Pleasant-Prairie-Wisconsin/default.aspx (Ex. 8).

[8] The Kroger Company, *Kroger and Ocado to Operate High-Tech Customer Fulfillment Center in Frederick, Maryland* (Jan. 23, 2020), http://ir.kroger.com/CorporateProfile/press-releases/press-release/2020/Kroger-and-Ocado-to-Operate-High-Tech-Customer-Fulfillment-Center-in-Frederick-Maryland/default.aspx (Ex. 9).

Pacific Northwest, and Western regions;[9] (viii) Michigan;[10] and (ix) Phoenix, Arizona.[11] The goal of the partnership is to provide online grocery shopping to consumers throughout all regions of the United States, enabling both quick delivery to customers and easy pickup by customers.

12. The U.S. Patent and Trademark Office ("USPTO") has issued several patents to Ocado related to OSP's innovations generally, and the Hive in particular. The invention at issue in this Complaint is claimed in U.S. Patent No. 11,079,770 ("'770 Patent") (Ex. 10), issued by the USPTO on August 3, 2021. The invention pertains to Cubic AS/RS improvements, and is particularly, but not exclusively, useful for management of online grocery orders. As explained below, Defendants have used and continue to use this patented invention as part of their opportunistic shift in business focus—from non-grocery merchants to online grocers at a time when online grocery shopping is growing significantly.

13. In contrast to Ocado, Defendants chose not to invest heavily in innovation, and instead continued to sell the legacy Red Line system. In January 2017, Defendants' founders decided to "cash out," and AutoStore was sold to the private equity firm EQT AB. In July 2019, AutoStore was again sold to another private equity firm, Thomas H. Lee Partners ("THL"). In April 2021, 40% of AutoStore's shares were sold to SoftBank Group, and an initial public offering

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[9] The Kroger Company, *Kroger and Ocado Announce Three Additional Regions for High-Tech Customer Fulfillment Centers* (June 5, 2020), http://ir.kroger.com/CorporateProfile/press-releases/press-release/2020/Kroger-and-Ocado-Announce-Three-Additional-Regions-for-High-Tech-Customer-Fulfillment-Centers/default.aspx (Ex. 11).

[10] The Kroger Company, *Kroger and Ocado Announce Location of High-Tech Customer Fulfillment Center in Romulus, Michigan* (Sept. 28, 2020), http://ir.kroger.com/CorporateProfile/press-releases/press-release/2020/Kroger-and-Ocado-Announce-Location-of-High-Tech-Customer-Fulfillment-Center-in-Romulus-Michigan/default.aspx (Ex. 12).

[11] The Kroger Company, *Kroger and Ocado Announce Location of High-Tech Customer Fulfillment Center in Phoenix, Arizona* (Jan. 22, 2021), http://ir.kroger.com/CorporateProfile/press-releases/press-release/2021/Kroger-and-Ocado-Announce-Location-of-High-Tech-Customer-Fulfillment-Center-in-Phoenix-Arizona/default.aspx (Ex. 13).

of AutoStore shares is planned for November 2021.[12] Under pressure to produce profit—and having passed up the opportunity to work in partnership with Ocado—AutoStore deliberately decided to copy Ocado's Cubic AS/RS technology and pass it off as AutoStore's own, particularly to target online grocery merchants.

14. In 2019, the same year as AutoStore's sale from EQT to THL, AutoStore launched a "new" system called Black Line, which is remarkably similar to Ocado's Hive and utilizes Ocado's patented technology. At the time that AutoStore supposedly developed the Black Line system, on information and belief, AutoStore knew of the application that led to Ocado's '770 Patent, or at least was willfully blind to it for the reasons set forth below; and on information and belief, AutoStore has known of the '770 Patent since it was issued by the USPTO. The Black Line robots, which are also referred to by generation, occupy substantially a single grid space on "double-double" rails, as depicted in the image below:

[12] Richard Milne, *SoftBank-Backed Robot Warehouse Group AutoStore Plans Oslo IPO*, FINANCIAL TIMES (Sept. 28, 2021), https://www.ft.com/content/0d1f5b96-58e9-4e39-a026-4e80c0dd9574 (Ex. 14).

15. According to Defendants, the Black Line system provides "high-volume throughput becoming ultra-optimized to meet the various needs of companies across multiple industries. State-of-the-art improvements to the robot and workstation modules provide companies the tools they need to provide 24/7 service."[13] As stated by one of Defendants' business partners, Bastian Solutions ("Bastian"), in marketing literature that is distributed on Defendants' behalf: "A modified 'double-double' grid, with double tracks in both directions, permits the robots to pass side-by-side in both the x and y directions. Combined with the robot's smaller footprint, the new grid can accept more robots and operate efficiently in high density configurations."[14] Bastian also touts the real-world benefits of the Black Line system, explaining that Red Line is suitable only "for customers with throughput requirements of up to 350 bins per hour per port," and "the new B1 robot, in combination with the new [pick station] can achieve up to 650 bins per hour per port—almost doubling today's maximum throughput level."[15]

16. In late 2020, Defendants introduced a new "software suite for its cube based order fulfillment system that increases robot productivity and efficiency by up to 40%," which is called the Router.[16] The Router is implemented in controllers sold by AutoStore to manage robot traffic in both AutoStore's Red Line and Black Line Cubic AS/RS. When implemented on the controllers

[13] AutoStore, *AutoStore Voted as a MHPN Reader's Choice Product of the Year* (Dec. 3, 2019), https://autostoresystem.com/news/autostore-voted-readers-choice-product-of-the-year/ (Ex. 15).

[14] Derek Cribley, *AutoStore Black Line: Your Questions Answered*, BASTIAN SOLUTIONS: THE MATERIAL HANDLING BLOG (Jan. 15, 2019), https://www.bastiansolutions.com/blog/autostore-black-line-your-questions-answered/ (Ex. 16).

[15] *Id.*

[16] Nedre Vats, *AutoStore Introduces Router: Game-Changing Productivity Software to Solve Order Fulfillment Challenges for eCommerce*, GLOBENEWSWIRE (Sept. 29, 2020), https://www.globenewswire.com/news-release/2020/09/29/2100400/0/en/AutoStore-Introduces-Router-Game-changing-Productivity-Software-to-Solve-order-fulfillment-challenges-for-eCommerce.html (Ex. 17).

sold by AutoStore, the "new" Router infringes Ocado's patented technology as set forth in Ocado's '770 Patent.

17. According to Defendants' press release, the "Router utilizes sophisticated computer algorithms to continuously calculate and recalculate in real time the most efficient path for AutoStore robots to move and deliver orders inside the company's high-density grid system. Every second, the advanced software analyzes and dynamically adapts to operational changes, accelerating the fulfillment process and maintaining a continuously optimized flow of order movement. In this way the system is able to process and adapt to continuously changing events happening outside the grid, such as new orders coming in, order cancellations, and movement of fulfillment personnel."[17]

18. Defendants stated that the Router "can be implemented in any AutoStore system . . . and by purchasing this new software, users can potentially improve total system throughput by up to 4x."[18] Defendants called the Router "the biggest development in AutoStore history in years."[19] In the launch video that Defendants released for the Router, they called the new product "the essence of [AutoStore's] technology," which is necessary to "unlock the full potential of AutoStore" and "one of the biggest milestones in AutoStore history."[20] In that same video, Defendants emphasized that "incremental improvements are simply not enough," and the Router was necessary so Defendants could "re-invent themselves in order to grow" because "software has always been the silent piece behind the scenes that makes everything happen."[21] Putting it in no

[17] *Id.*

[18] *Id.*

[19] *Id.*

[20] AutoStore, *AutoStore | Router™ Launch*, YouTube (Sept. 29, 2020), https://www.youtube.com/watch?v=L8qNU6INf40.

[21] *Id.*

uncertain terms, Defendants' Chief Product Officer stated that the Router "positions AutoStore as the ultimate choice when it comes to eGrocery fulfillment."[22]

19. Finally, along with the launch of the Router, Defendants began to publish marketing materials specifically targeted to online grocery merchants. As noted above, Defendants historically had focused on non-grocery retail customers, and Defendants' shift appears to be motivated by growing demand for grocery delivery in 2020. Like the Black Line system and the Router, Defendants' shift in focus to online grocery merchants depends on infringement of Ocado's patented technologies—which were optimized for grocery application.

20. Defendants' shift in business strategy, and increasingly brazen infringement of Ocado's patent to achieve that shift, compelled Ocado to file a first action in this Court, alleging infringement of four other patents related to the Hive: U.S. Patent Nos. 9,796,080 ("'080 Patent"), 10,913,602 ("'602 Patent"), 10,961,051 ("'051 Patent"), and 10,901,404 ("'404 Patent"). *See Ocado Innovation Ltd*. v. *AutoStore AS*, Case No. 1:21-cv-00041 (D.N.H.).[23] The '602 Patent and '051 Patent address the load handling devices, or robots, while the '080 Patent discloses the systems and methods for picking, storing, and delivering customer orders. The '404 Patent is in the same family as the '770 Patent, and like the '770 Patent, comprises a system and method for controlling the movement of robots on the storage grid. That case is currently pending.

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[22] *Id.*

[23] AutoStore also filed two separate patent infringement actions against Ocado in October 2020. AutoStore filed the first action, which is stayed, in the Eastern District of Virginia. *AutoStore Tech. AS* v. *Ocado Cent. Servs. Ltd.*, *Ocado Group plc*, *Ocado Innovation Ltd.*, *Ocado Operating Ltd.*, *Ocado Sols. Ltd.*, & *Ocado Sols. USA Inc.*, No. 2:20-cv-00494 (E.D. Va.). The second action is pending before the U.S. International Trade Commission. *In re Certain Automated Storage & Retrieval Sys., Robots, & Components Thereof*, Investigation No. 337-TA-1228. A hearing was held before Chief Administrative Law Judge Bullock on August 2-6, 2021, and his Initial Determination on the matter is expected on November 5, 2021, Ocado has sought *inter partes* review or post-grant review from the U.S. Patent and Trademark Office of all patents asserted by AutoStore in those actions, and review has been instituted as to two of those patents.

21. As with these other patents, Defendants are willfully infringing the '770 Patent, and Ocado seeks, among other things, permanent injunctive relief, lost profits, and other damages sufficient to remedy and prevent this continued infringement.

THE PARTIES

22. Plaintiff Ocado Solutions is an entity organized under the laws of the United Kingdom, with its principal place of business located at Buildings One & Two, Trident Place, Mosquito Way, Hatfield, Hertfordshire, AL10 9UL, United Kingdom. Ocado Solutions is a wholly owned subsidiary of Ocado Group plc, and Ocado Solutions is the subsidiary that conducts Ocado's global business of selling OSP technology to other merchants. Ocado Solutions, for example, is the counterparty to the Ocado-Kroger partnership agreements, and Ocado Solutions receives payments made by Kroger to Ocado under those agreements. Ocado Solutions is the exclusive licensee of the '770 Patent.

23. Plaintiff Ocado Innovation is an entity organized under the laws of the United Kingdom, with its principal place of business located at Buildings One & Two, Trident Place, Mosquito Way, Hatfield, Hertfordshire, AL10 9UL, United Kingdom. Ocado Innovation is the assignee of the '770 Patent, and it is a wholly owned subsidiary of Ocado Group plc. Ocado Innovation has exclusively licensed the '770 Patent to Ocado Solutions.

24. Defendant AutoStore AS is a Norwegian corporation with its headquarters and principal place of business at Stokkastrandvegen 85, 5578 Nedre Vats, Norway. On information and belief, AutoStore AS markets and sells AutoStore's Red Line and Black Line systems globally.

25. Defendant AutoStore System Inc. is a corporation organized under the laws of Delaware, with its headquarters and principal place of business at 3 Corporate Park Drive, Unit 1, Derry, New Hampshire 03038. On information and belief, AutoStore System Inc. is a wholly owned subsidiary of AutoStore AS, and AutoStore System Inc., among other things, (i) markets

and sells AutoStore's Red Line and Black Line systems to customers and business partners in the United States, and (ii) provides design, engineering, training, and support (including installation, testing, and repair) to customers and business partners throughout the United States.

JURISDICTION AND VENUE

26. This Court has subject matter jurisdiction over this patent infringement action, brought under Title 35 of the United States Code, pursuant to 28 U.S.C. §§ 1331 and 1338(a).

27. This Court has personal jurisdiction over Defendant AutoStore System Inc. because its headquarters and principal place of business are located in Derry, New Hampshire. AutoStore System Inc. has, at all relevant times, acted as an agent for, and at the direction of, AutoStore AS.

28. Personal jurisdiction also exists over AutoStore AS, under New Hampshire's long-arm statute, N.H. Rev. Stat. § 293-A:15.10, because AutoStore AS has its U.S. principal place of business in New Hampshire, and, both on its own and through its agent, AutoStore System Inc., AutoStore AS (i) has committed acts of infringement in this District, and (ii) advertises, markets, offers for sale, imports, stores, distributes, or sells infringing products in this District.

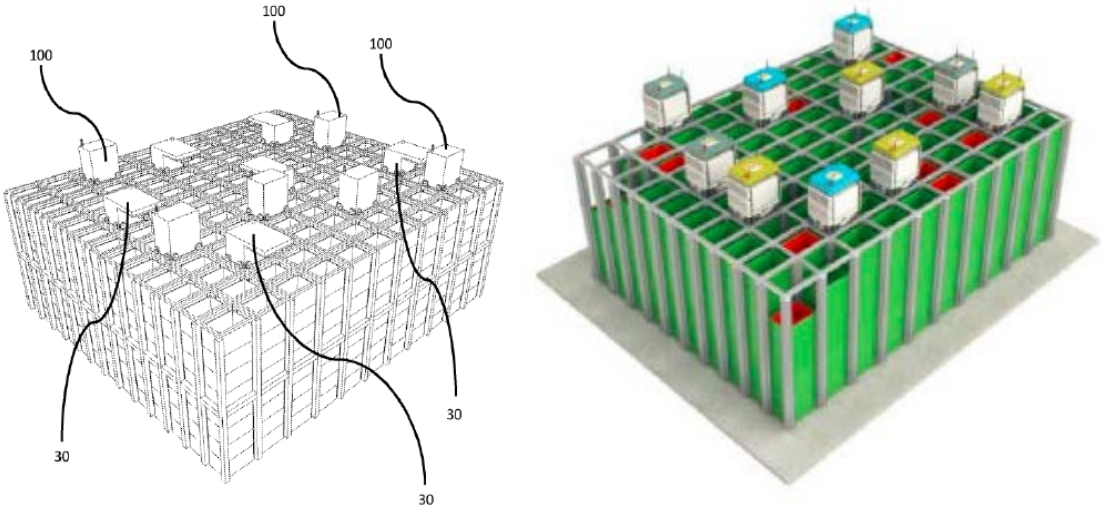
29. In the alternative, if the Court determines personal jurisdiction over AutoStore AS is not appropriate under New Hampshire's long-arm statute, N.H. Rev. Stat. § 293-A:15.10, then personal jurisdiction in this District nonetheless exists over AutoStore AS under Fed. R. Civ. P. 4(k)(2) because (i) Plaintiffs' claims arise under federal law, (ii) in raising an objection to personal jurisdiction, AutoStore AS failed to identify a U.S. state in which it is subject to personal jurisdiction, and (iii) the exercise of jurisdiction comports with due process because AutoStore AS has committed acts of infringement throughout the United States by advertising, marketing, offering for sale, importing, distributing, or selling infringing products and systems to business partners and customers throughout the United States.

30. Venue is proper in this District, pursuant to 28 U.S.C. § 1400(b), because AutoStore System Inc. has its headquarters in New Hampshire and has committed acts of infringement in this District. AutoStore AS is a foreign corporation, and therefore venue is proper in this District.

THE ASSERTED PATENT

31. Historically, to fulfill customer orders, retail grocery employees would pick items off shelves in warehouses with large amounts of empty space. OSP's Hive, a reimagined Cubic AS/RS, is an efficient and cost-effective alternative, which leverages inventive combinations of high-density, modular storage grids with robotic elements that can rapidly lift and transport storage bins to order-fulfillment stations for handling by other robotics equipment or employees.

32. Unlike traditional product storage and retrieval systems, Cubic AS/RS—of which Ocado's Hive is an example—are formed by vertical support beams, the tops of which are connected by rails to create an X/Y grid. The grid of Ocado's Hive has two sets of rails—with the first set running perpendicular to the second set—and each rail contains two separate tracks (the "double-double" rails discussed above in ¶¶ 8, 14–15). The structure consists of rectangular columns in which storage containers are stacked, which, among other things, eliminates aisles and maximizes storage density. The figures below are an illustrative example of the structure of the system.



33. The storage containers are accessed from above by robots that travel laterally across the grid and are equipped with a lifting and gripping device, which enables them to reach down into the vertical columns and retrieve containers. The containers are then lifted into the robots' container-receiving space—which, in the robots depicted above, is a cavity inside the outer housing of the robot. The robots then transport the storage bins across the grid and deliver them to a human operator or other robotics equipment at a picking station.

34. OSP robots communicate with a central controller using advanced patented connectivity technology. Among other functions, the control system plans and reserves the most efficient route for the robots to reach and retrieve the target storage container. The system also provides additional specific collision prevention capabilities, including a clearance mechanism to authorize or restrict robot movement across the grid based on several considerations. Once the robot has retrieved the target storage bin, the robot transports it across the grid and lowers it to a designated hand-off point. The robot can then release the bin and continue with its next task. The storage bin moves through buffering locations until a human operator or other robotics equipment is ready to transfer the inventory items in the storage bin into a delivery container.

35. The features described above enhance the efficiency of Cubic AS/RS and create substantial value for grocery and other merchants, and several of the features described above are claimed in the ’770 Patent.

36. Pursuant to this district’s Supplemental Rules for Patent Cases § 2.1(a)(2), Ocado describes an illustrative claim for the ’770 Patent in the following paragraphs.

37. On August 3, 2021, the USPTO issued U.S. Patent No. 11,079,770, entitled “Methods, Systems and Apparatus for Controlling Movement of Transporting Devices.” (Ex. 10.) The ’770 Patent issued from U.S. Patent Application No. 17/149,426, filed on January 14, 2021 as a continuation of U.S. Patent Application No. 15/993,097 filed on May 30, 2018 (now U.S. Patent No. 10,955,834), which is a divisional application of U.S. patent application No. 15/316,249 filed as application No. PCT/EP2015/062380 on June 3, 2015. The ’770 Patent claims priority to British Patent Application No. 1409883, filed on June. 3, 2014. The ’404 Patent, asserted by Ocado against AutoStore in this Court in Civil Action No. 1:21-cv-00041, is a member of the same patent family as the ’770 Patent and is directed to the same technology.

38. The ’770 Patent teaches a system and method for controlling the movement of robots on the storage grid. (*See* Ex. 10, col. 1, ll. 17–23.) As explained above, Ocado’s Cubic AS/RS includes several robots, generally dozens or hundreds of robots, that operate on the grid simultaneously. For the robots to do so rapidly and efficiently, and without colliding, there must be a control unit configured to, among other things, plan and reserve routes for the robots to travel safely across the grid and dynamically re-plan routes based on developments as the system operates.

39. The problem facing the inventors of the ’770 Patent was the near-simultaneous determination of multiple, high-performance, collision-free paths for hundreds of robots in real time. When the application to which the ’770 Patent claims priority was filed in 2014, the

coordinated path planning for a multitude of autonomous vehicles had only recently become the object of serious study. Even then, most work at that time focused on decentralized path planning (such as for an individual autonomous car), not on centralized, high-performance path planning for hundreds of robots or vehicles acting in a coordinated fashion.

40. The ’770 Patent’s centralized system for controlling robot movement includes a processor or processors, connected to a memory unit and other computing structures, configured (including through software) to determine a set of potential pathways for a robot to travel from one point to another on the grid, such that the pathways do not overlap the pathways previously determined for other robots. The ability of the invention claimed in the ’770 Patent to determine non-conflicting paths through upfront processing and preplanning in this way substantially reduces the possibility of robot collisions in highly dense systems. As a result, the performance of the system is increased because other, less efficient collision avoidance systems (including, for example, robot proximity sensor systems) are invoked much more rarely. This is set out in independent claims 1 and 29 of the ’770 Patent. The configuration of processors to perform these tasks was unconventional and not well understood at the time of the invention claimed in the ’770 Patent. Control systems did not determine non-conflicting routes that took into account the previously determined paths for each of the other robots in the system.

41. In the invention claimed in the ’770 Patent, the processors are also configured to predict, based on the robots’ actual behavior as reported to the control system, the potential for collisions with other robots that may arise as the robot travels on a previously determined pathway. The processors are further configured to generate clearance commands allowing the robot to continue to travel along the pathway if no collision is predicted. If a collision is predicted, clearance to traverse the previously determined path is denied and a new path can be planned and reserved “dynamically”—at the time clearance is refused—for the non-cleared robot. This is also

set out in, for example, independent claims 1 and 29 of the '770 Patent. This, likewise, was not a feature of prior systems, which simply commanded the robot to turn or stop to avoid a potential collision.

42. Humans simply cannot carry out the movement planning and path optimization processes as necessary to provide collision-free paths as the robots carry out their assigned tasks at the speeds required to coordinate hundreds of robots simultaneously and in real time. As the Court held in denying AutoStore's motion to dismiss the claims of the '404 Patent, the technology claimed in these patents is analogous to "trying to drive 50 cars at once in a crowded city grid without crashing them, or the technology used to control traffic signals or traffic lights in that same crowded city grid," and "the [C]ourt cannot say that a human would be able to perform either of these tasks entirely in her mind." (Case No. 1:21-cv-00041, Dkt. No. 47 at 15.) Moreover, the system claimed in the '770 Patent is inextricably tied to the management of *robots*, which requires the controller to have capabilities humans do not have, including the ability to receive electronic status reports from the robots, to electronically track the location and movement of each robot, and to communicate electronically with the robots to provide predetermined paths and clearance commands.

43. The '770 Patent also teaches and claims advantageous ways in which the processors are configured to carry out these tasks, and to interact and operate in conjunction with the other components of the claimed system, including other structures in the controller, as well as the robots, the storage grid and the storage containers. For example, as set out in the claims, the system includes a memory device for storing clearance instructions, which it may use and connect with others components of the system, like the system clock, which allows it to reserve clearance instructions to be sent at a future time. The processors may be configured to determine pathways using, among others, optimization algorithms and/or robot physics models. They may be

configured to generate clearance commands for a predefined period of time if no collision is predicted, or, if a collision is predicted, to commence route re-planning based on (among other things) status reports or measurements provided by the robots (taking into account the dimensions of the grid). The '770 Patent also teaches and claims numerous other optional and advantageous variations, which optimize the performance of busy robots as they quickly move around the storage grid to store, retrieve, move, and deliver items for customer orders.

44. The claims of the '770 Patent are not directed to an abstract idea. In denying AutoStore's motion to dismiss the claims of the '404 Patent, the Court held that the claims "focus on a specific means or method that improves" grid-style automated storage control system technology and "are not directed to a result or effect that itself is the abstract idea and merely invoke generic processes and machinery." (*Id.* at 19.) Instead, as the Court found, "the patented system optimizes and improves existing systems of controlling and coordinating robot movement in an automated grid storage system," which "in turn, allows the robots to move dynamically, more-efficiently, with fewer collisions, and at higher speeds than prior systems." (*Id.* at 19 n.38.) The same reasoning applies to the claims of the '770 Patent, which has the same specification as the '404 Patent and which claims a similar routing and clearance technology as the '404 Patent.

45. Because the claims of the '770 Patent are limited to the context of robots operating in a grid-style, stacked bin storage systems, there is no risk that the patent will preempt the idea of vehicle routing or traffic planning and collision avoidance in all fields.

46. Exemplary Claims 1 of the '770 Patent is set forth below.

> 1. A system for controlling movement of at least one transporting device arranged to transport at least one container, the system comprising:
>
> one or more processors configured to:
>
> determine a plurality of paths for a plurality of transporting devices to travel on pathways of a facility so that no two of the plurality of transporting devices have locations while traveling along the plurality of

paths that would cause the plurality of transporting devices to overlap at a same time, the plurality of paths comprising a first path for traveling by a first transporting device of the plurality of transporting devices and a second path for traveling by a second transporting device of the plurality of transporting devices,

wherein the pathways form a grid-like structure above a plurality of containers arranged within the facility, the pathways comprising a first set of parallel rails extending in a first direction and a second set of parallel rails extending in a second direction transverse to the first direction in a substantially horizontal plane, at least some of the plurality of containers being stored in stacks,

wherein the plurality of transporting devices are configured to selectively move laterally in the first direction and the second direction on the pathways at least some of the plurality of transporting devices being configured to transport the plurality of containers, generate a plurality of clearance commands for the plurality of transporting devices to cause the plurality of transporting devices to travel on the pathways along portions of the plurality of paths, the plurality of clearance commands comprising a first clearance command for the first transporting device,

determine there is a potential for a collision between the first transporting device traveling along the first path and the second transporting device traveling along the second path, and

responsive to a determination that there is the potential for the collision; withhold a second clearance command for the first transporting device that would cause the first transporting device to travel on the pathways along a portion of the first path, determine a revised path different from the first path for the first transporting device to travel on the pathways, and generate a third clearance command for the first transporting device to cause the first transporting device to travel on the pathways along a portion of the revised path; and a memory device configured to store the plurality of clearance commands and the third clearance command.

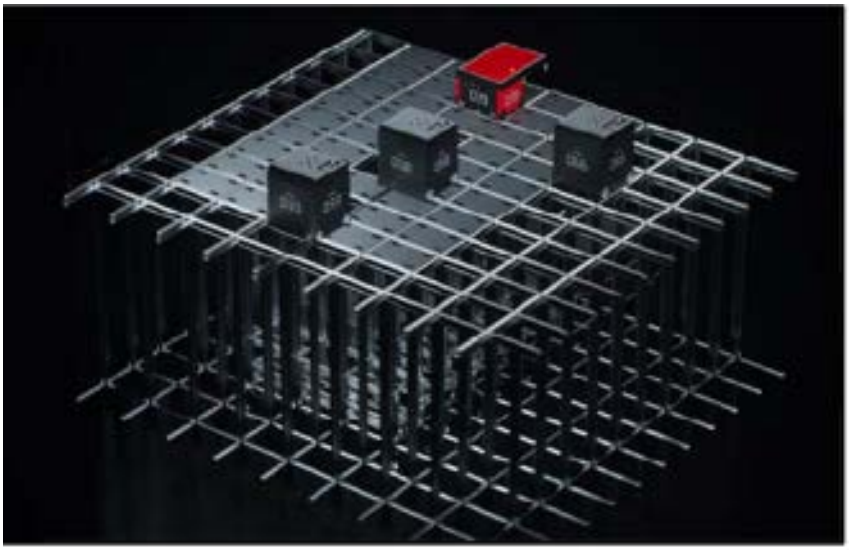
DEFENDANTS' INFRINGEMENT

47. Defendants have offered to sell, sold, used, made, distributed, and imported into the United States (i) Red Line robots and the Red Line system since at least 2015; (ii) Black Line robots and the Black Line system since at least 2019; and (iii) a control system including software called the Router, for use with the Red Line and Black Line systems, since at least October 2020.

48. As explained in more detail below, Defendants' Red Line and Black Line systems infringe the '770 Patent through use of controllers with Router software. The following section

describes the main components of Defendants' Red Line and Black Line systems, as relevant to the infringement allegations in this Complaint. The description below focuses on the control system for both the Red Line and Black Line systems (*i.e.*, the controllers with Router software).[24]

49. Defendants' Black Line and Red Line storage systems include a cubic storage structure with the top level forming a grid. The structure, as seen below, is formed using vertical support beams, the tops of which are connected by a horizontal grid made up of two sets of parallel rails—one set of parallel rails in the X-direction perpendicular to the other set in the Y-direction. This structure creates rectangular columns in which storage bins are stacked, and which hold the bins in place.[25]



50. The AutoStore robots move along the horizontal grid using two wheel assemblies—each comprised of four wheels—arranged perpendicular to one another. To control the movements of robots, Defendants use a separate control system described as "the command center of

[24] The descriptions provided herein are high-level. They are not exhaustive and not intended to replace detailed claim construction positions and infringement or validity contentions, which Plaintiffs will provide at a later date consistent with the Court's Local Rules and Scheduling Order.

[25] *See generally* AutoStore, *The Grid*, https://www.autostoresystem.com/system/grid (last visited Oct. 6, 2021) (Ex. 18); AutoStore, *Bins*, https://www.autostoresystem.com/system/bins (last visited Oct. 6, 2021) (Ex. 19).

AutoStore."[26] Its tasks include advanced traffic control; planning and scheduling of tasks; logging bin and robot positions in real time; a flexible, configurable alert system; and providing service and support functionality.[27]

51. At least some of Defendants' control systems use Router software, which launched in September and October 2020, as explained above (*supra* ¶¶ 16-18). The controllers with Router software are compatible with both the Black Line and Red Line systems. In October 2020 marketing materials, Defendants described the Router as software that "continuously" optimizes robot traffic, such that routes are re-evaluated "[e]very second."[28] In promotional materials, Defendants described the Router as optimizing the Cubic AS/RS system and "working smarter" by, for example, "deciding which robots to use for what job or which route [a] robot should take" to complete its task.[29]

52. On information and belief, AutoStore controllers including Router software conduct sophisticated planning and dynamic re-planning in which each robot has at least a portion of its route planned in a manner that prevents a robot from overlapping with any other robot at a point on the grid at the same time. The image below, taken from one of Defendants' presentations introducing the controller with Router software, depicts routing decisions made by the new control

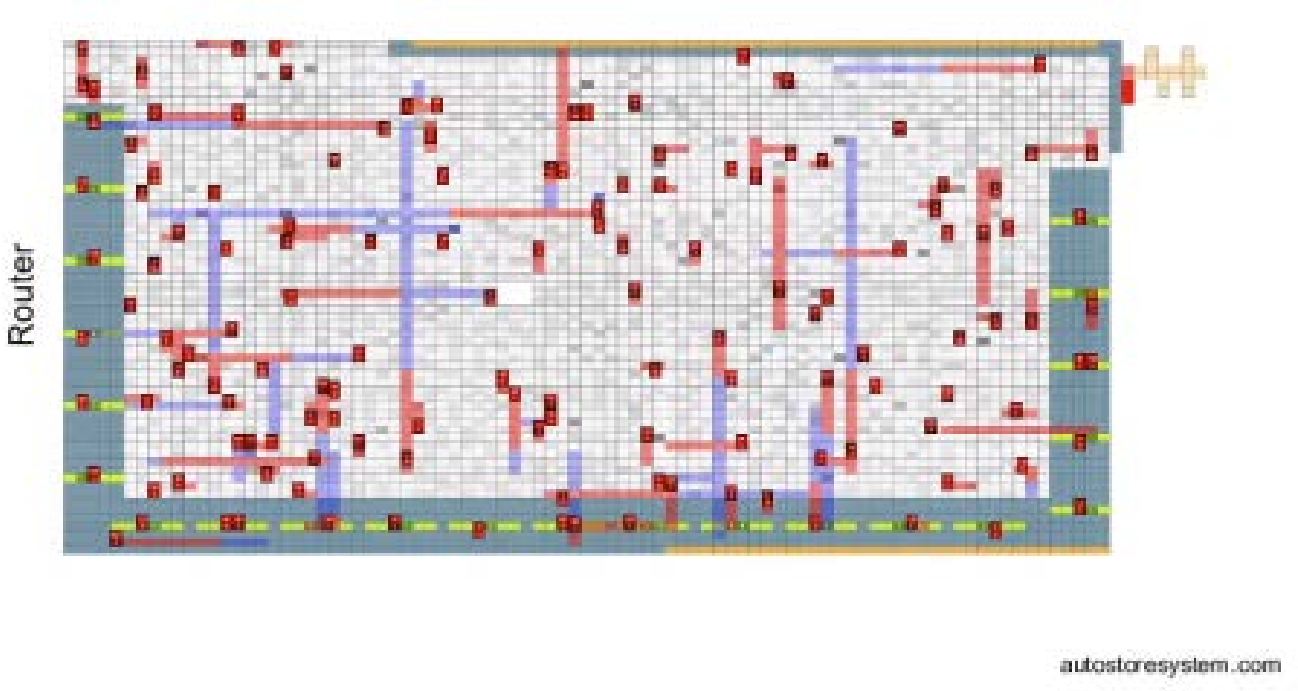
[26] AutoStore, *Controller*, https://www.autostoresystem.com/system/controller (last visited Oct. 6, 2021) (Ex. 20).

[27] *Id.*

[28] *AutoStore Introduces Router* (Ex. 17).

[29] AutoStore, *Router Launch*, YouTube (Sept. 29, 2020), https://www.youtube.com/watch?v=L8qNU6INf40, at 6:27, 7:22.

system.[30] The presentation explains that the dark red rectangular boxes represent robots and the blue-shaded routes depict the robots' planned routes.[31]



53. The presentation further explains that the robots "cannot cross [the] red . . . blocked areas," which depict the robots' reserved path across the grid.[32] The red-shaded routes appear to represent locations on the grid that have been cleared for a particular robot to traverse at a particular time to prevent collisions, among other reasons.

54. Defendants tout the ability of the controller with Router software to "analyze[] and dynamically adapt[] to operational changes,"[33] and thus to "constantly re-evaluat[e] all the routes [that the robots could take] to ensure the best possible traffic flow."[34] In fact, Defendants estimate

[30] *See* AutoStore, *Online-Pressekonferenz zur neu entwickelten Software-Suite Router*, YouTube (Sept. 29, 2021), https://youtu.be/OzfR3BypU2M, at 14:16–14:42.

[31] *Id*. at 14:29–14:42.

[32] *Id*. at 17:55–18:08.

[33] *AutoStore Introduces Router* (Ex. 17).

[34] *Router Launch*, at 7:47–7:50.

that by "constantly adjusting the location and path of Robots in real time," it can make the robots "40% more efficient."[35]

DEFENDANTS HAVE WILLFULLY INFRINGED AND CONTINUE TO WILLFULLY INFRINGE THE '770 PATENT

55. Defendants and Ocado have interacted for nearly a decade, including exploration of a partnership in 2012 through which the companies would co-develop Ocado's inventions related to OSP's Hive. (*Supra* ¶ 7.) Ocado and Defendants were involved in intellectual property litigation in 2016 in Oslo, Norway, in which Ocado alleged that Defendants misappropriated Ocado's inventions related to a central cavity robot (*i.e.*, a robot that would lift storage containers up vertically into a cavity).

56. In light of the history between the parties, and the fact that Ocado and AutoStore presently are the only competitors in the Cubic AS/RS market, AutoStore has been (i) aware or likely aware of Ocado's entire Cubic AS/RS patent portfolio, including the '770 Patent (and the applications that led to it), and (ii) aware that it infringes or likely infringes the '770 Patent, but has nevertheless continued its unlawful business activities without authorization from Ocado. The controllers with Router software sold by AutoStore have no substantial non-infringing uses, and plainly infringe the '770 Patent as they are sold to customers or when used by AutoStore's business partners or customers according to their intended purpose to control robot movement on a Red Line or Black Line Cubic AS/RS.

57. AutoStore was, at the very least, willfully blind to the existence of the technology in the '770 Patent. As a result of this and prior litigation, AutoStore was aware of the '404 Patent, which, like the '770 Patent, comprises a system and method for controlling the movement of robots on the storage grid. Moreover, the '770 Patent is related to the '404 Patent and claims priority to

[35] *Controller* (Ex. 20).

the same British patent application as the ’404 Patent. Thus, the only way AutoStore would not have been aware of the ’770 Patent would have been by taking deliberate steps to avoid learning of it.

58. Defendants’ knowledge of Ocado’s patented technologies is further supported by the fact that (i) Defendants submitted third-party observations in connection with Ocado’s prosecution of the international patent applications related to the ’770 Patent, and (ii) Defendants have frequently cited Ocado’s patents in their own patent applications. Moreover, as alleged in paragraphs 47 through 54 above, the facts and circumstances strongly suggest that Defendants—under private equity ownership—deliberately copied Ocado’s patented technologies in order to compete unfairly with Ocado and its business partners.

59. Additionally, before the initiation of this Action, Ocado filed an action in the District of New Hampshire, including for infringement of the ’404 Patent,[36] which has the same specification as the ’770 Patent and claims routing and clearance technology similar to that claimed in the ’770 Patent.

60. Also before the initiation of this Action, AutoStore initiated entitlement proceedings in the United Kingdom, baselessly claiming that it is entitled to certain patents that derive from the earliest parent application of the ’770 Patent (although they claim different technology).

61. Based on the foregoing, before the initiation of this Action, Defendants were at least willfully blind to the existence of the ’770 Patent. Given the historical discussions between the parties regarding Ocado’s patent portfolio, and the patent-related proceedings between the parties, Defendants were at least (i) aware that there was a high probability that Ocado filed the

[36] *Ocado Innovation Ltd.*, Case No. 1:21-cv-00041.

application that led to the '770 Patent (and the technology claimed in it), and (ii) if AutoStore did not actually know the '770 Patent (and the application that led to it), AutoStore intentionally avoided learning of them despite the high probability that it existed.

62. Based on the foregoing, Defendants' infringement of the '770 Patent has been knowing, and Defendants therefore have willfully infringed the '770 Patent.

FIRST COUNT
PATENT INFRINGEMENT
'770 PATENT AND BLACK LINE / RED LINE
35 U.S.C. §§ 271 AND 281

63. Plaintiffs incorporate and repeat the preceding paragraphs 1 through 62 above as if fully set forth herein.

64. Defendants have directly infringed one or more claims of the '770 Patent pursuant to 35 U.S.C. § 271(a), either literally or under the doctrine of equivalents, by making, using, importing, selling, distributing and/or offering to sell a controller including Router software in the United States, including as part of the Black Line and Red Line systems. Defendants' infringement is ongoing.

65. Defendants also have indirectly infringed one or more claims of the '770 Patent pursuant to 35 U.S.C. § 271(b) by actively inducing others (including, but not limited to, their business partners and customers) to infringe the '770 Patent by, among other things, providing instructions, manuals, technical assistance, and promotional materials relating to the installation, use, operation, and maintenance of controllers including Router software in its Black Line and Red Line systems in the United States. Defendants' inducement is ongoing.

66. For illustrative purposes only, below is a high-level explanation of how Defendants infringe the '770 Patent:

a. *The first claim element of Claim 1.*

i. This claim element recites:

> 1. A system for controlling movement of at least one transporting device arranged to transport at least one container, the system comprising: . . .

ii. AutoStore controllers including Router software meet this element.

As described *supra* ¶¶ 16–18, AutoStore's controllers including Router software are intended to control the movement of robots that are arranged to transport bins from one location to another on the cubic storage system. Specifically, "[t]he Controller . . . knows the location of every bin [and] every robot," and using software, "the Controller sends tasks to Robots, directing their actions to find and collect Bins."[37] "Plotting their path through the Grid using the AutoStore software platform Router, the Controller is constantly adjusting the location and path of Robots in real time."[38]

b. *The second claim element of Claim 1.*

i. This claim element recites:

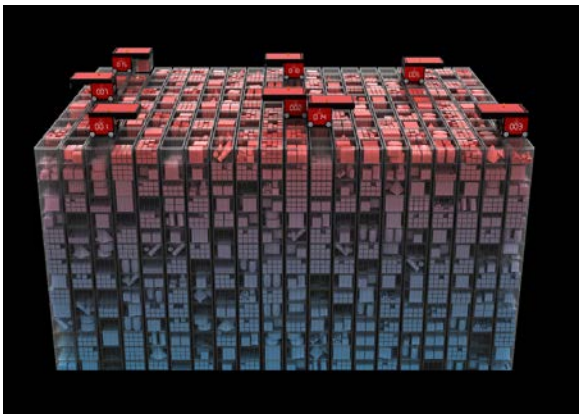
> one or more processors configured to:
>
> determine a plurality of paths for a plurality of transporting devices to travel on pathways of a facility so that no two of the plurality of transporting devices have locations while traveling along the plurality of paths that would cause the plurality of transporting devices to overlap at a same time, the plurality of paths comprising a first path for traveling by a first transporting device of the plurality of transporting devices and a second path for traveling by a second transporting device of the plurality of transporting devices,
>
> wherein the pathways form a grid-like structure above a plurality of containers arranged within the

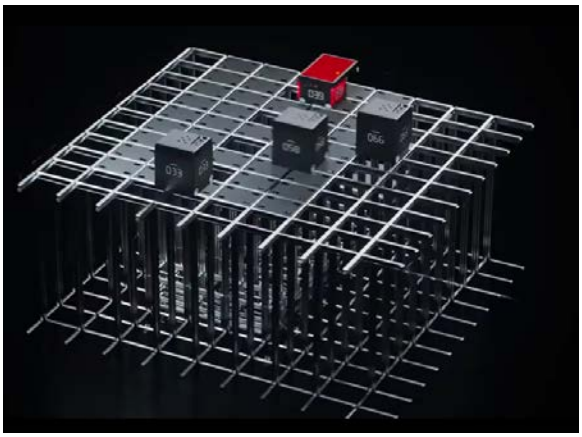
[37] *Controller* (Ex. 20).

[38] *Id.*

> facility, the pathways comprising a first set of parallel rails extending in a first direction and a second set of parallel rails extending in a second direction transverse to the first direction in a substantially horizontal plane, at least some of the plurality of containers being stored in stacks,
>
> wherein the plurality of transporting devices are configured to selectively move laterally in the first direction and the second direction on the pathways at least some of the plurality of transporting devices being configured to transport the plurality of containers . . . .

ii. The AutoStore controller including Router software meets this element. As described *supra* ¶¶ 49–50, the pathways determined by the configured processors form a grid-like structure in a horizontal plane above a plurality of bin storage containers, allowing the robots to move bins around the grid, which is comprised of a first set of parallel rails arranged perpendicularly to a second set of parallel rails. Below is an image of the grid-like structure depicting these features:





iii. The AutoStore controller including Router software, on information and belief, includes processors configured to plan and reserve a route for robots operating on this grid system. AutoStore's controller including Router software is described as optimizing the planning and routing of the robots—specifically, the robots are described as "working smarter." Additionally, the Router software purportedly allows "more than 100X more evaluations for every choice," including "which route that robot should take." AutoStore has also described the controller including Router software as "ensur[ing] the best possible traffic flow, always."[39] Further, the

[39] *Router Launch*, at 7:47–7:50.

controller including Router software "plans and controls robot traffic to ensure robots will not collide. The robots report their position continuously to the ASCS software. The robot driving control is done by the motor encoder and secured by two different track sensors for each direction."[40]

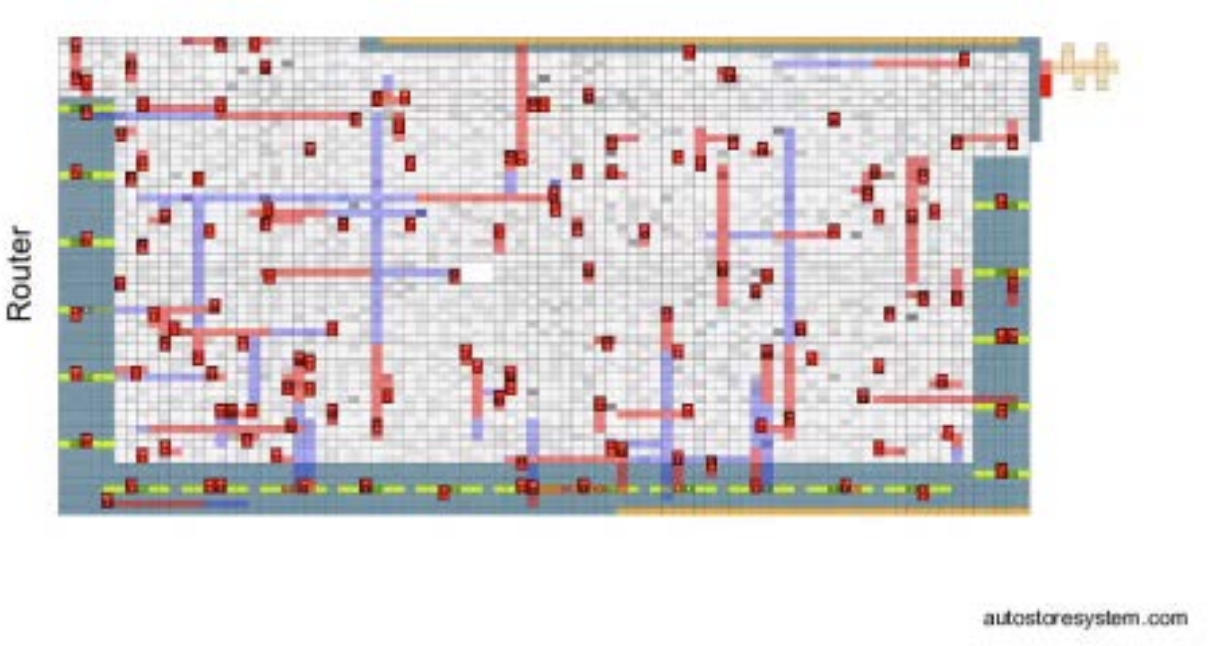
iv. On information and belief, the image below shows the routing decisions made by controller's software, in which the dark red rectangles represent robots and the blue-shaded routes depict the robots' planned routes.[41] The robots "cannot cross [the] red . . . blocked areas," which depict the robots' reserved path across the grid, ensuring that robots do not overlap in the same place at the same time.[42] Upon information and belief, the red-shaded routes represent locations on the grid that have been reserved for a particular robot at a particular time to prevent collisions, among other reasons.[43]

[40] AutoStore, *Frequently Asked Questions, Robots*, https://www.autostoresystem.com/faq/robots (last visited Oct. 6, 2021) (Ex. 21).

[41] *Online-Pressekonferenz zur neu entwickelten Software-Suite Router*, at 14:16–14:42.

[42] *Id*. at 17:55–18:08.

[43] *See id.* at 14:16–14:42.



c. *The third claim element of Claim 1.*

i. This claim element recites:

> generate a plurality of clearance commands for the plurality of transporting devices to cause the plurality of transporting devices to travel on the pathways along portions of the plurality of paths, the plurality of clearance commands comprising a first clearance command for the first transporting device . . . .

ii. As described *supra* at ¶¶ 52–54 on information and belief, the processors of the AutoStore controller with Router software are configured to generate clearance commands to cause the robots to traverse at least a portion of the paths previously determined by the processors. The controller with Router software is able to "analyze[] and dynamically adapt[] to operational changes"[44] and thus "constantly re-evaluat[e] all the routes [that the robots could

[44] *AutoStore Introduces Router* (Ex. 17).

take] to ensure the best possible traffic flow."[45] In addition, the Controller "is constantly logging Bin and Robot positions in real time. The Controller will also run diagnostic troubleshooting when robot errors occur using XHandler, greatly increasing the system's uptime."[46] The controller with Router software "utilizes sophisticated computer algorithms to continuously calculate and recalculate in real time the most efficient path for AutoStore robots to move and deliver orders inside the company's high-density grid system" and then communicates those paths via clearance commands.[47] With reference to the images and quotations above, *supra* ¶¶ 72–76, the descriptions of how Router functions, including that it is "constantly re-evaluating all the routes to ensure the best possible traffic flow," lead to a reasonable inference that clearance instructions to travel over a portion of a reserved path are provided for execution by a control unit on each robot for execution at a later time. Consequently, on information and belief, the Router provides clearance instructions to travel over a portion of a reserved path.

d. *The fourth claim element of claim 1:*

i. This claim element recites:

> determine there is a potential for a collision between the first transporting device traveling along the first path and the second transporting device traveling along the second path, and

[45] *Router Launch*, at 7:47–7:50.

[46] *Controller* (Ex. 20).

[47] *AutoStore Introduces Router* (Ex. 17).

> responsive to a determination that there is the potential for the collision; withhold a second clearance command for the first transporting device that would cause the first transporting device to travel on the pathways along a portion of the first path, determine a revised path different from the first path for the first transporting device to travel on the pathways, and generate a third clearance command for the first transporting device to cause the first transporting device to travel on the pathways along a portion of the revised path; and a memory device configured to store the plurality of clearance commands and the third clearance command.

ii. AutoStore controllers with Router software meet this element.

iii. As described *supra* at ¶¶ 52–54, on information and belief, the processors of the AutoStore controller with Router software are configured to "constantly re-evaluat[e] all the routes to ensure the best possible traffic flow," by receiving information from the robots regarding their status and responding to that status with a clearance command.[48] AutoStore has repeatedly and publicly stated that the Router uses sophisticated algorithms to "continuously calculate and recalculate in *real time* the most efficient path for AutoStore."[49] Specifically, "[t]he robots report their position continuously to the ASCS software"[50] and the Router "plans and controls robot traffic to ensure robots will not collide."[51] Consequently, on information and belief, the AutoStore controller with Router software

[48] *Router Launch*, at 7:47–7:50.

[49] *AutoStore Introduces Router* (emphasis added) (Ex. 17).

[50] *Frequently Asked Questions, Robots* (Ex. 21).

[51] *Id.*

determines, in real time, whether there is potential for a collision between robots and may as a result of that determination, withhold clearance or clear the robot to travel along another path.

67. Defendants' infringement has been and continues to be willful.

68. Ocado has been and will continue to be irreparably harmed and damaged by Defendants' acts of infringement.

69. Unless enjoined, Defendants will continue to infringe the '770 Patent.

70. As a consequence of the foregoing infringing activities by Defendants, Plaintiffs have been damaged in an amount not yet determined.

JURY DEMAND

71. Plaintiffs request a jury trial of all issues in this Action so triable.

PRAYER FOR RELIEF

WHEREFORE, Plaintiffs request judgment in their favor and relief:

A. Adjudging, finding, and declaring that Defendants have infringed and continue to infringe the '770 Patent.

B. Adjudging, finding, and declaring that Defendants' infringement has been and continues to be willful.

C. An Order enjoining Defendants from infringing the '770 Patent, and enjoining Defendants' officers, agents, servants, employees, and those persons in active concert or participation with them, from infringing the '770 Patent.

D. An Order requiring Defendants, to the extent permitted by contract or law, to (i) retrieve from their business partners and customers any software, robots, or other Cubic AS/RS hardware or software that is being used as part of an infringing system or being used in an infringing manner, and (ii) instruct their business partners and customers that any software, robots,

or other Cubic AS/RS hardware that originated from Defendants or their business partners cannot be used as part of an infringing system or used in an infringing manner.

E. Awarding Plaintiff Ocado Solutions an accounting and lost profits in a sum to be determined at trial.

F. Awarding Plaintiffs compensatory damages in a sum to be determined at trial, but no less than a reasonable royalty pursuant to the Patent Act.

G. Awarding Plaintiffs pre- and post-judgment interest.

H. Awarding Plaintiffs enhanced damages (up to a trebling) in light of Defendants' willful infringement.

I. Awarding Plaintiffs their reasonable attorneys' fees, costs, and disbursements in this Action, as allowed by the Patent Act.

J. Granting Plaintiffs such other and further relief as is just and proper.

Date: October 6, 2021

Respectfully submitted,

/s/ Henry C. Quillen .

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